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ABSTRACT

A survey of teachers in the province of Alberta was conducted to assess which variables they felt were most important in influencing their decisions to use an educational television (ETV) program with their classes for the first time. Respondents were asked to rate the six following variables as to their influence on the teacher's decision-making process: (1) a program description in prospectus or catalog, (2) recommendations by other teachers, (3) recommendations by administrators, (4) recommendations by consultants or media experts, (5) availability of television or video equipment, and (6) availability of support materials. A factor analysis on the responses received from 189 teachers indicated that increasing utilization rates of ETV among teachers appears to depend upon good technical quality, suitable content, availability of equipment, and the program description in a catalog. (MER)

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FACTORS INFLUENCING THE UTILIZATION OF EDUCATIONAL TELEVISION

BY

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Over the past several decades educational television (ETV) has become an acceptable and efficient aspect of classroom teaching. Research has demonstrated that given the opportunity and proper conditions, students of all ages can learn as much by watching good educational television as by traditional classroom methods. In addition, ETV can bring experiences and ideas into the classroom which would not be possible without the use of this medium.

Perhaps the best method to assess the success of ETV in the classroom is to examine utilization rates. That is, how often do teachers in the classroom actually use educational television programs. The most recent ACCESS In-School Audience Survey (RE-102-79) reported that during one school term, 39% of the responding teachers in the province of Alberta used "some" educational television. Elementary schools used television/video programs the most (44%) and high schools (31%) the least. It is difficult to determine if these rates imply "good" or optimal utilization of ETV in the province. Since these rates have increased by over 10 percentage points during the last year, there may be room for further increases in the utilization rates of ETV in the classroom. One cannot expect 100% of teachers to use ETV since the content available is not applicable to all subject areas. Also, this method of presenting information may not be suitable to some teaching approaches.

There are many influences which may affect utilization of ETV. Several of these include the following: content of program, production techniques, environmental characteristics, learner characteristics and teacher characteristics. Although the utilization of ETV is more complex than simply supplying relevant content, there is a dirth of research and subsequent useful information in this area. All of the above-mentioned variables appear to be important influences on the use of ETV in the classroom, yet there is little documented evidence regarding which variables occupy the most influential role. If these variables

could be identified and implemented into future educational television programs, the programs may be made more useful and appealing, and hopefully be used more often on a daily basis in the classroom.

The purpose of this study was to assess which variables teachers felt were most important in influencing their decisions to use a program with their class. Due to the exploratory nature of this investigation it was not possible to establish which variables would exert the most influence on this decision. It is hoped that the results of this investigation can be used to increase teachers' utilization of ETV.

PROCEDURE

Approximately 400 questionnaires were distributed, through ACCESS Associated Schools, to teachers throughout the province. Of these, 189 questionnaires were returned. Teachers were asked to respond to two questions and provide several demographic characteristics. The first question asked teachers to rate the importance of six variables upon their decision to use a program with their class for the first time. These variables included: (a) program description in prospectus or cataloque, (b) recommendations by other teachers, (c) recommendation by administration, (d) recommendation by consultant or media expert, (e) availability of TV and VTR equipment and (f) availability of support material. The second question asked teachers to rate how important a number of variables were in influencing their decision to use a program with their class after previewing it or using it once with a class. A total of 44 variables were included encompassing the following factors: (a) content characteristics - these accounted for 55% of the variables on the questionnaire and included aspects such as relevancy of content, entertainment value, cognitively-oriented materials and availability of information, (b) production aspects - these accounted for 23% of the total variables and included such characteristics as use of special effects, animation and

graphics; (c) environmental characteristics - 7% of the total variables were included in this factor, for example, program popularity with other teachers and availability of equipment; and (d) other characteristics - the remaining 15% of the variables included such aspects as consistency of teachers' and students' attitudes with those depicted in the program, amount of student participation, presence of stated program objectives and availability of support material. On half of the questionnaires the order of the variables was reversed in order to control for any rating bias which may occur due to the order of presentation.

RESULTS

Of the teachers responding to the questionnaire, 47% taught elementary grades, 29% taught junior high, 10% taught high school, and the remaining 14% taught more than one of these division levels. The sample of teachers taught a wide variety of subject areas and averaged 12 years of teaching experience. The average number of times the teachers reported using ETV with their class during the past month was 3.26 times. Forty-one (41) percent of the responding teachers did not use ETV at all during the past month.

The initial question asked teachers to rate, using a 6-point scale (1=not at all important, 6=very important) the importance of certain variables upon influencing their decision to use a program for the first time. The average ratings were as follows: (a) availability of TV and VTR equipment (5.29), (b) program description in prospectus or catalogue (4.95), (c) availability of support material (4.56), (d) recommendations by other teachers (4.42), (e) recommendation by consultant or media expert (3.86) and (f) recommendation by administration (3.43). These ratings indicate that recommendations by other persons are not as important in influencing the decision to use a program as more practical issues (i.e., availability of equipment) and characteristics of the program itself.

The second question asked teachers to rate, using the same 6 point scale, the extent to which a number of factors influence their decision to use a program, once they have previewed it or used it at least once with their class. The average ratings for all 44 variables are presented in Table 1. As with the initial question, the variables which seem to be the most important influences on utilization of programs involve the content of the program, technical quality, and availability of equipment. The least important variables include support for the program from other sources, entertainment value, and the use of special production techniques.

The second operation in examining the results of this study involved conducting a factor analysis on the data. This is a complicated statistical technique designed to reduce large amounts of data into meaningful components. The first step in this analysis is to compute the correlation coefficients between all of the variables to create a correlation matrix. In simpler terms, this involves assessing the relationship between each variable and all the other variables involved in the analysis. This results in an array or matrix reflecting the relationships among the variables. The second step involves submitting this matrix to factor analytic techniques in order to identify underlying patterns of relationships which may exist. In this manner, the data is reduced to several factors or components which can be used to describe the data rather than a large number of variables. For example, in the present study we are looking for clusters of variables which teachers feel are important influences on their decision to use ETV programs. Instead of examing each one of the 44 variables individually, factor analytic techniques allow us to look at groups of variables which form clusters or factors. In this manner, the data involved in the study become much more manageable and interpretable.

The data from this investigation was well-suited to this type of analysis for two reasons; first, there were a large number of variables involved which

makes interpretation of the results otherwise difficult and, second, the study was exploratory. Therefore, through data-reduction techniques, the results can become useful for future studies.

A principal components factor analysis was conducted on responses to the second question and yielded five interpretable factors. The factors are well-defined with few variables being identified with more than one factor. The results of this analysis are presented in Table 2. It should be kept in mind that the labels applied to any factor are subjective. The first factor involves overall technical aspects of production and content. All of these variables were rated (using the 6-point scale described previously) as being fairly important influences on teachers' decisions to reuse a program. These qualities are very basic considerations such as picture quality, technical quality, sound quality, clarity of content, and program pace. Intuitively, these characteristics would be expected to be important features of any TV program, however, they may often be overlooked by designers and producers of ETV programs.

The second component involves variables which are not important in influencing utilization of ETV programs. The average ratings for all of these variables were closest to the "not at all important" end of the rating scale. This factor includes special production techniques designed to increase the popularity of the program. Variables included in this factor include animation, humour, novelty of content, presence of identifiable characters, and program popularity. Such techniques, although making the program entertaining for students, do not seem to influence a teacher's decision to re-use a program.

The third and fourth factors involved variables which were important (based on average ratings) for influencing utilization of ETV. The third factor involves appropriateness of content to class ability and requirement. The variables in this factor include difficulty of content, timeliness of content, balanced

treatment, and appropriateness for many ability levels. The fourth factor may be labelled as the fit of program content within school curriculum. Variables involved in this factor include curriculum content, fit of content, and extensive treatment of topic.

The final factor involves catch-all production and content techniques which are not very important variables (based on average ratings) for influencing a teacher's decision to utilize a program. These variables include applicability of content to different subject areas, availability of information and availability of support material.

CONCLUSIONS

The results of this investigation yield some interesting and clear-cut conclusions. In terms of using a program for the first time, variables such as availability of equipment and the program's description in a catalogue are more important than outside recommendations. These results indicate that accurate and interesting descriptions of ETV programs should be available in program catalogues. It is also important to keep in mind what equipment is available to teachers and design programs accordingly.

Subsequent use of programs appear to depend on several factors. First, the most important factor influencing a teacher's decision to reuse a program involves the overall technical quality and clarity of content. This may seem like an obvious conclusion, yet many ETV programs may not be used because of poor technical quality or difficult aspects of the content. Second, according to these results, "added extras" that are used to maintain attention and add interest and popularity to the program are not important influences on utilization of the program. These variables may be more important for increasing popularity with students than with teachers who are deciding whether to use a pro-

gram. This raises an interesting issue which could be explored in a future investigation. That is, teachers and students may have different expectation of ETV. Students may expect to be entertained through the use of humour and special effects, whereas, teachers' concerns lie with the quality of the program.

Third, other factors which teachers consider to be important for influencing their decision to reuse an ETV program are also concerned with basic aspects of the program. These include the appropriateness of the content for the students and how well it fits in with the curriculum.

In conclusion, increasing utilization rates of ETV among teachers appears to depend upon good technical quality, suitable content availability of equipment and the program description in a catalogue. A recent innovation in the teaching profession is a "back to the basics" movement. Perhaps educational television producers and developers should also move in this direction, paying attention to the basic aspects of the information presented in the program.

TABLE 1

AVERAGE RATINGS OF EXTENT EACH VARIABLE

INFLUENCES UTILIZATION OF ETV PROGRAMS

VARIABLE	AVERAGE RATING*
Accuracy of program content	5.50
Clarity of content	5.38
Language level of program	5.23
Fit of content within curriculum	5.17
Sound quality	5.09
Difficulty of content for students	5.08
Availability of TV and VTR equipment	5.06
Picture quality	4.96
Amount of information in program	4.92
Timeliness of content	4.92
Appropriate for many ability levels within a grade level	4.89
Encouragement of class discussion	4.83
Content supplementary to curriculum	4.69
Overall technical quality	4.68
Content required by curriculum	4.65
Balanced treatment of content	4.58
Coordination of program component	4.56
Pace of program	4.54
Perspective to information	4.49
Provides introduction to subject area	4.43
Availability of support material	4.42
Affectively-oriented material	4.39
Extensive treatment of topic	4.37
Use of colour	4.32
Presence of stated or implied program objectives	4.30

Table 1 Cont'd

VARIABLE	AVERAGE RATING*
Cognitively-oriented materials	4.26
Amount of student participation while viewing	4.25
Availability of information from other sources	4.20
Type of teaching approach employed	4.19
Length of program	4.12
Applicability of content to different subject areas	4.10
Fit of scheduled broadcast within school timetable	4.00
Presence of identifiable characters	3.85
Use of graphic displays	3.77
Presence of humour	3.76
Novelty of content	3.74
Appropriate for many grade levels	3.71
Attitudes depicted in program consistent with students' attitudes	3.58
Attitudes depicted in program consistent with teachers' attitudes	3.52
Entertainment value of program	3.46
Use of animation	3.45
Recomendation of program by administration	3.14
Use of special effects (e.g., split screen)	3.12
Program popularity with other teachers	2.99

*Rated on a 6-point scale (1=not at all important, 6=very important).

TABLE 2

SUMMARY OF PRINCIPAL COMPONENTS

FACTOR SOLUTION

FACTOR	VARIABLE	FACTOR LOADING*
1. Technical Aspects of Production and Content Important for Utilization	a. Picture quality	.81
	b. Sound quality	.78
	c. Overall technical quality	.67
	d. Clarity of content	.55
	e. Pace of program	.54
	f. Use of colour	.54
	g. Amount of information in program	.46
	h. Perspective to information	.45
2. Special Production Techniques and Program Popularity Not Important for Utilization	a. Use of animation	.60
	b. Novelty of content	.57
	c. Presence of humour	.54
	d. Presence of identifiable characters	.53
	e. Program popularity with other teachers	.52
	f. Recommendation of program by administration	.50
	g. Use of special effects	.49
	h. Entertainment value of program	.48
	i. Attitudes depicted in program consistent with students' attitudes	.48
3. Appropriateness of Content	a. Difficulty of content for students	.60
	b. Appropriate for many ability levels within a grade level	.53
	c. Balanced treatment of content	.52
	d. Timeliness of content	.47
	e. Clarity of content	.44
	f. Affectively-oriented material	.43
	g. Language level of program	.40

Table 2 Cont'd

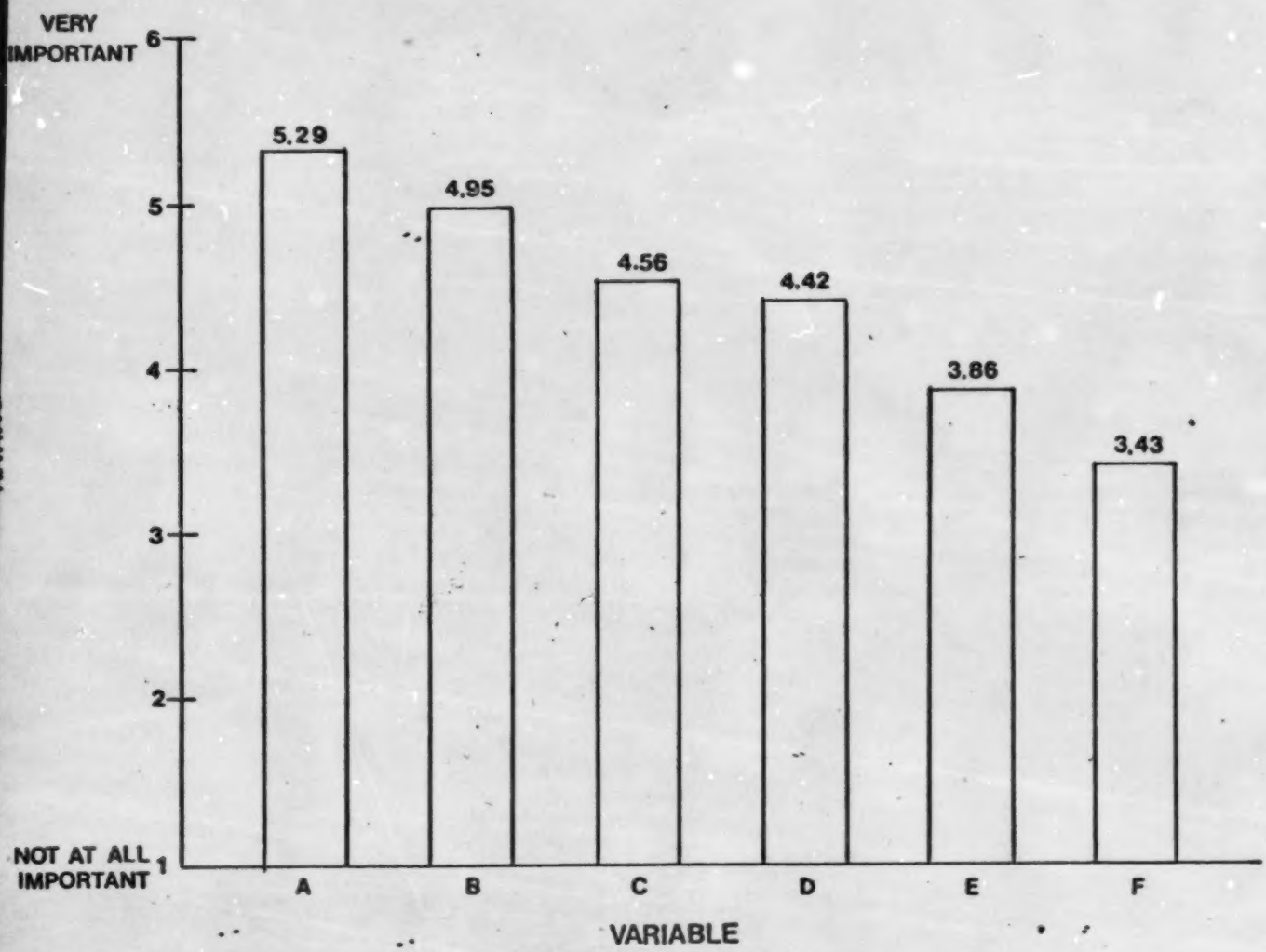
FACTOR	VARIABLE	FACTOR LOADING*
4. Content fit with Curriculum	a. Content required by curriculum	.71
	b. Fit of content within curriculum	.62
	c. Extensive treatment of topic	.58
	d. Cognitively-oriented material	.44
	e. Coordination of program components	.42
5. Non-Important Production and Content Techniques	a. Applicability of content to different subject areas	.58
	b. Availability of information from other sources	.54
	c. Availability of support material	.52
	d. Fit of scheduled broadcast within school timetable	.44
	e. Presence of identifiable characters	.43
	f. Use of special effects	.43
	g. Use of graphic displays	.41

*Factor loadings indicate how closely the variables are associated with that factor, or in statistical lingo, how highly the variable "loads" on the factor. The higher the loading the more the variable is related to the factor.

FIGURE 1

OF EXTENT EACH VARIABLE
AVERAGE RATINGS

INFLUENCES INITIAL UTILLZATION OF ETV PROGRAMS



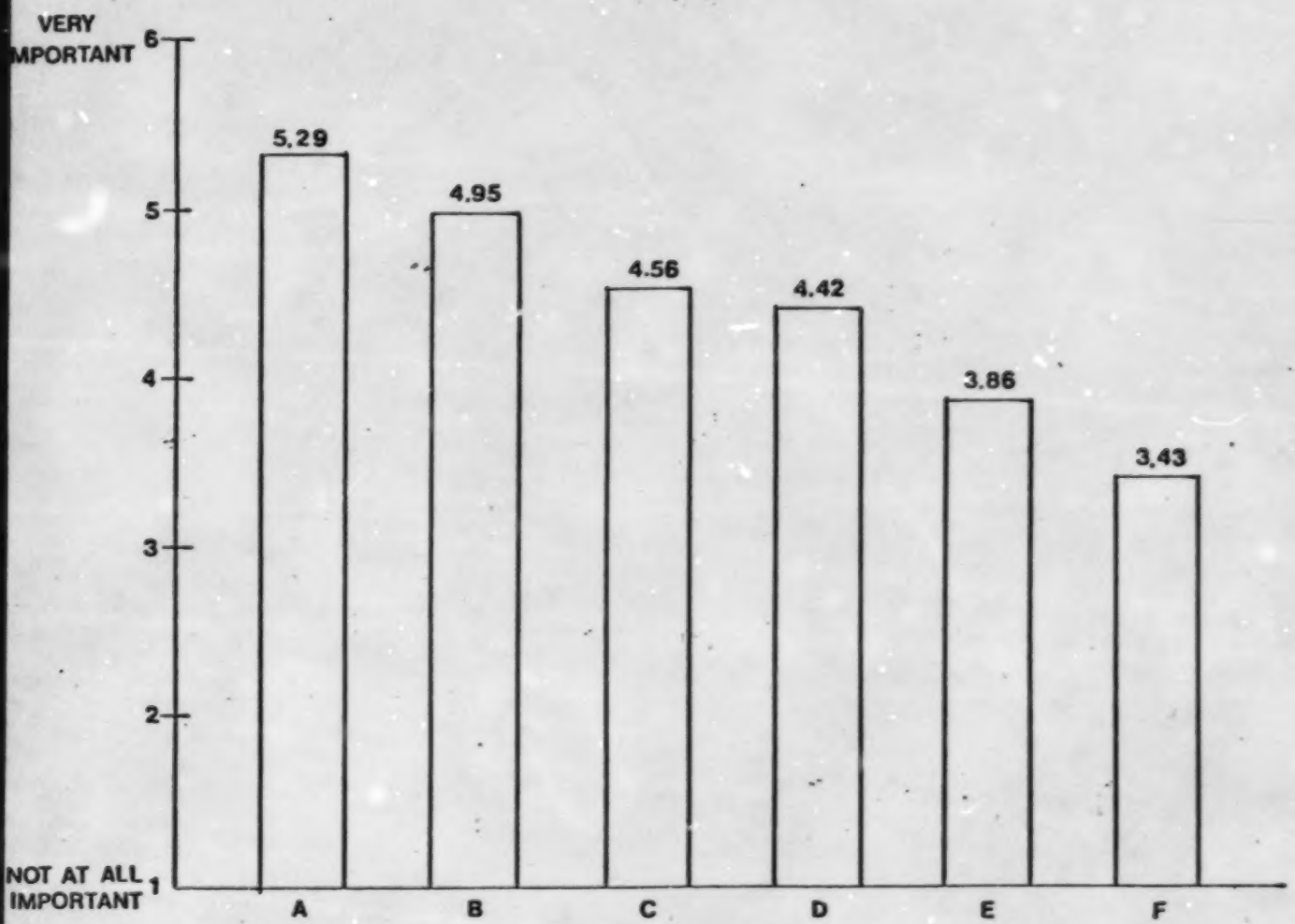
A=Availability of Equipment
B=Program Description
C=Support Material
D=Recommendations by Teachers
E=Recommendations by Consulants
F=Recommendations by Administration

FIGURE 1

AVERAGE RATINGS

OF EXTENT EACH VARIABLE

INFLUENCES INITIAL UTILI ZATION OF ETV PROGRAMS



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